

23. (Twice Amended) A semiconductor device according to claim 16 wherein a single element is formed in a single first region.

24. (Amended) A semiconductor device according to claim 15 wherein the second well is in contact with all of the first wells.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3, 5-12, 15, 16, 19-20 and 22-24 are pending in the present application. Claims 4 and 18 have been canceled, and Claims 1, 5, 15, 16, 19, 20 and 22-24 have been amended by the present amendment.

In the outstanding Office Action, Claims 15, 20, 22, 23 and 24 were rejected under 35 U.S.C. § 112, first paragraph; Claims 4, 5, 18 and 19 were objected to; Claim 1 was rejected under 35 U.S.C. § 103(a) as unpatentable over Stolmeijer et al; Claim 16 was rejected under 35 U.S.C. § 102(e) as anticipated by Stolmeijer et al; and Claims 4 and 18 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the indication of allowable subject matter. In light of this indication, Claim 1 and 16 have been amended to include the subject matter recited in Claims 4 and 18, respectively. Accordingly, the rejection of Claim 1 under 35 U.S.C. § 103(a) as unpatentable over Stolmeijer et al and the rejection of Claim 16 under 35 U.S.C. § 102(e) as anticipated by Stolmeijer et al are moot.

Regarding the rejection of Claims 15, 20, 22, 23 and 24 under 35 U.S.C. § 112, first paragraph, Claim 15 has been amended to recite that the second well on one side of the predetermined boundary has a higher concentration than the first wells on the one side as

disclosed in Figure 3, for example. Further, Claims 20 and 22-24 have been amended to recite that a single element is formed in a single first region as discussed in the specification at page 11, lines 7-9. Accordingly, it is respectfully requested this rejection be withdrawn.

In addition, Applicants note Stolmeijer et al do not teach the claimed invention because each of the regions 81-84 in Stolmeijer et al does not correspond to a well, but rather correspond to an impurity layer which functions to provide a potential.

Further, the subject matter recited in Claims 4 and 18 (which has been incorporated into Claims 1 and 16, respectively) has been amended to recite "the predetermined boundary" in light of the comments noted in the outstanding Office Action. Accordingly, it is respectfully requested the objection to Claims 4, 5, 18 and 19 be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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IN THE CLAIMS

Claims 4 and 18 (Canceled).

--1. (Three Times Amended) A semiconductor device comprising:

a semiconductor substrate;

an element isolation film formed such as to have a predetermined depth from a main surface of said semiconductor substrate, said element isolation film dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than each of said first wells in said semiconductor substrate, said second well being in contact with some of said first wells to provide electrical connection therebetween and not being in contact with said first wells adjacent to said some of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first wells on the other side are of a second conductivity type, and

wherein said second well is formed only on one side of said second region with reference to the predetermined boundary.

5. (Amended) A semiconductor device according to claim [4] 1 wherein said second well is formed in a memory cell part in said second region.

15. (Twice Amended) A semiconductor device comprising:

a semiconductor substrate;

an element isolation film formed such as to have a predetermined depth from a main surface of said semiconductor substrate, said element isolation film dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than said first wells in said semiconductor substrate, said second well [having a higher concentration than said first wells and] being in contact with a plurality of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first and second wells on the other side are of a second conductivity type, and

wherein the second well on one side of the predetermined boundary has a higher concentration than the first wells on said one side.

16. (Twice Amended) A semiconductor device comprising:

a semiconductor substrate;

a plurality of element isolation films formed such as to have a predetermined uniform depth from a main surface of said semiconductor substrate, said element isolation films dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than each of said first wells in said semiconductor substrate, said second well being in contact with some of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first wells on the other side are of a second conductivity type, and

wherein said second well is formed only on one side of said second region with reference to the predetermined boundary.

19. (Twice Amended) A semiconductor device according to claim [18] 16 wherein said second well is formed in a memory cell part in said second region.

20. (Twice Amended) A semiconductor device according to claim 1[,], wherein [each of the first wells comprises] a single element is formed in a single first region.

22. (Twice Amended) A semiconductor device according to claim 15[,], wherein [each of the first wells comprises] a single element is formed in a single first region.

23. (Twice Amended) A semiconductor device according to claim 16[,], wherein [each of the first wells comprises] a single element is formed in a single first region.

24. (Amended) A semiconductor device according to claim 15[,], wherein the second well is in contact with all of the first wells.--